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Application No. 10/540,941
Amendment dated August 25, 2008
Reply to Office Action of May 23, 3008

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Docket No.: 80363(47762)

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method for manufacturing a fuel cell bipolar plate, the method comprising,
entangling thermoplastic resin fibers into a nonwoven fabric, heating and softening a nonwoven fabric including an electrically conductive powder and the thermoplastic resin fibers being [[of]] 0.1 to 20 μm in diameter,
distributing an electrically conductive powder among the thermoplastic fibers; and
shaping the ~~softened~~ nonwoven fabric.
2. (Currently Amended) The method for manufacturing a fuel cell bipolar plate according to claim 1, wherein the nonwoven fabric has [[an]] a content of the electrically conductive powder of 70 wt% or more.
3. (Original) The method for manufacturing a fuel cell bipolar plate according to claim 1, wherein the electrically conductive powder has an average particle size which is at least ten times the diameter of the thermoplastic resin fibers and not more than one-third the length of the thermoplastic resin fibers.
4. (Original) The method for manufacturing a fuel cell bipolar plate according to claim 1, wherein the nonwoven fabric has a porosity of 50% or more.
5. (Original) The method for manufacturing a fuel cell bipolar plate according to claim 1, wherein the thermoplastic resin fibers are polyarylene sulfide resin fibers.
6. (Original) The method for manufacturing a fuel cell bipolar plate according to claim 1, wherein the electrically conductive powder is uniformly distributed within the nonwoven fabric.
7. (Original) The method for manufacturing a fuel cell bipolar plate according to claim 1, wherein the nonwoven fabric is shaped using a mold.

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8. (Currently Amended) A fuel cell bipolar plate obtained by
entangling thermoplastic resin fibers being 0.1 to 20 μm in diameter, into a nonwoven fabric,
distributing an electrically conductive powder among the thermoplastic fibers;
heating and softening ~~[[a]] the nonwoven fabric; including an electrically conductive powder and thermoplastic resin fibers of 0.1 to 20 μm diameter,~~ and
shaping the softened nonwoven fabric.

9. (Original) The fuel cell bipolar plate of claim 8, which has a volume resistivity in a thickness direction of 30 $\text{m}\Omega\cdot\text{cm}$ or less.

10. (Original) A fuel cell comprising a stack construction in which a plurality of electrolyte-membrane-electrode assemblies, each of which has a pair of mutually opposed electrodes and an electrolyte membrane disposed between the electrodes, are stacked so that the electrolyte-membrane-electrode assemblies are each held between bipolar plates,
wherein the bipolar plates are the fuel cell bipolar plates of claim 8.

11. (New) The method for manufacturing a fuel cell bipolar plate according to claim 2, wherein the nonwoven fabric has a content of the electrically conductive powder of 70wt% to 80wt% or more.

12. (New) The method for manufacturing a fuel cell bipolar plate according to claim 4, wherein the nonwoven fabric has a porosity of 75% or less.

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